3.6 WILDLIFE AND WILDLIFE HABITAT

3.6.1 AREA OF ANALYSIS AND METHODOLOGY

This section addresses common wildlife and wildlife habitats in the study corridor and impacts that the transmission line would have on these resources. The area of analysis for common wildlife consisted of a 2-mile wide corridor extending from Segment A to J, including the K and L re-routes. For wildlife habitat, it consisted of a 500-foot wide study corridor (250-feet on each side of the centerline) extending from Segment A to J, including the K and L re-routes.

Data on the existing environment were collected by conducting field surveys in 1999 and 2000 on foot, in 4 x 4 vehicles, ATVs, and helicopters at various times of the day. Biologists walked meandering transects along portions of the study corridor, and binoculars were used to scan both sides of the centerline. The Nevada Division of Wildlife (NDOW) and U.S. Fish and Wildlife Service (USFWS) provided additional data. The findings were documented in the Vegetation Survey report by Summit Envirosolutions, Inc. and Tetra Tech EMI (2000) and the Wildlife Survey report by Summit Envirosolutions, Inc (2000).

In the summer of 1999, Nevada experienced one of the worst fire seasons since the 1940s; more than 1.5 million acres were burned. Wildfires struck again in 2000. The fires impacted wildlife habitats ranging from pinyon-juniper woodlands to salt desert shrub. Segments B, C, E, L, and J of the route alternatives traverse five main burn areas: Trail Canyon and Mule (Segment B), Frenchie (Segment C), Sadler (Segment E), and Crusoe (Segment J). These burn areas are mapped on Figure 3.4-1 in Section 3.4. The vegetation survey data were collected before the fires occurred in the summer of 1999 and in 2000.

REGULATORY FRAMEWORK

BLM Resource Management Plans (RMPs)

The BLM RMPs provide management standards for wildlife habitat and wildlife. BLM Field Offices monitor wildlife and habitat condition and maintain crucial wildlife habitat jointly with NDOW. BLM and NDOW jointly manage habitat for mule deer, pronghorn antelope, and other game species. BLM manages habitat condition for any wildlife species by assessing the ability of a land area to supply the forage, cover, water, and space requirements of wildlife. Trend studies determine the directional change of a habitat from or toward desired condition. These Habitat and Trend studies (BLM Manual 6630.2, 6630.3, and 6630.4) allow the BLM to adjust management prescriptions through grazing or other public uses to improve habitat for big game.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC 703) makes it unlawful to pursue, hunt, take, capture, kill, or possess any migratory bird, or part, nest, or egg of such bird listed in wildlife protection treaties among the United States and Great Britain (on behalf of Canada), Mexico, Japan, and the former USSR. In addition, this act also contains a clause that prohibits baiting or poisoning of these bird species. The current list of species covered by MBTA can be found in Title 50, Code of Federal Regulations Sec. 10.13. Because several migratory bird species may occur within the study corridor, the MBTA applies to those bird species that may be affected during the implementation of the Falcon to Gonder project.

3.6.2 AFFECTED ENVIRONMENT

COMMON WILDLIFE

In this document, the term “common wildlife” refers to wildlife species that are relatively abundant and are not "special-status" species. Special-status species, such as those listed as threatened, endangered, or sensitive by government agencies, are covered in Section 3.7.

The 1999 and 2000 field surveys identified 90 species of birds, 29 species of mammals, seven species of reptiles, one species of amphibian, and three species of fish in the study corridor (SEI 2000). There are approximately 250 vertebrate wildlife species that occur in northeastern Nevada; the project would cross habitat for many of these species. Areas with greater habitat and structural diversity, such as water and rock outcrops, and multiple vegetation layers typically had significant numbers of wildlife species.

Sagebrush habitat provides food and cover for jackrabbits (*Lepus californicus*), cottontail rabbits (*Sylivagus* spp.), ground squirrels (*Spermophilus* spp.), wood rats (*Neotoma* spp.), pocket mice (*Peroganthus* spp.), deer mice (*Peromyscus maniculatus*), grasshopper mice (*Onychomys* spp.), sagebrush vole (*Lagurus curtatus*), and kangaroo rats (*Dipodomys* spp.). Birds inhabiting sagebrush include the chukar (*Alectoris chuckar*), black-billed magpie (*Pica pica*), gray flycatcher (*Empidonax wrightii*), sage thrasher (*Oreoscoptes montanus*), several sparrows, and hawks. Small mammals and reptiles also rely on sagebrush vegetation as a source of water because morning dew collects on the leaves and flowers, making it available for small animals. It also provides cover in the form of shade during the hot, dry summers (Aspen 1995). Migratory mule deer (*Odocoileus hemionus*) use this habitat type as a major winter range, and it is a principal habitat for pronghorn (CDFFP 1988). Low sagebrush is somewhat more palatable to pronghorn (*Antilocapra americana*) than big sage and provides an important source of early spring forage for pronghorn and mule deer. Several raptor species use low sagebrush as hunting grounds. Sage grouse (*Centrocercus urophasianus*), burrowing owl (*Athene cunicularia*), and pronghorn breed in low sagebrush areas.

Pinyon-juniper woodlands, particularly when combined with crops and grazing lands, provide good foraging and/or nesting habitat for raptors, such as golden eagle (*Aquila chrysaetos*), ferruginous hawk (*Buteo regalis*), and other raptor species (Aspen 1995). In addition, pinyon nuts and juniper berries are an important food source for birds such as pinyon jay (*Gymnorhinus cyanocephalus*), wintering birds and small mammals, and these in turn serve as dispersal agents for both plant species (CDFFP 1988). Some mammals, such as pronghorn, may consume juniper foliage, especially during harsh winters. Pinyon-juniper habitats may also be used by small mammals, deer, and antelope for foraging. Small and larger mammals (e.g., bushy-tailed woodrat [*Neotoma cinerea*]) build nests in this habitat type. Many species of reptiles, including western fence lizards (*Sceloporus occidentalis*) and gopher snakes (*Pituophis melanoleucus*), inhabit pinyon-juniper woodlands. Juniper and associated shrubs provide an important source of winter forage and winter cover for mule deer (FERC 1995).

Mammals

The desert woodrat (*Neotoma lepida*) and the bushy-tailed woodrat both occupy similar habitats. It was assumed that the middens encountered in the vicinity of Segments B, D, E, H, I, and J correspond to one of these two species of woodrat. However, the bushy-tailed more often nests in rocky outcrops and even nests high up in trees in coniferous forests. The desert woodrat often nests on the ground in the old burrow of a ground squirrel or kangaroo rat, but is also known to use rocky areas a significant portion of the time in Nevada. Middens were most commonly located in rock outcrops in the vicinity of the study corridor. Not all middens were active, as determined by the lack of fresh-cut vegetation and fresh scat.

Five species of ground squirrels were recorded in the study corridor: Richardson's ground squirrel (*Spermophilus richardsonii*), golden-mantle ground squirrel (*S. lateralis*), Belding's ground squirrel (*S. beldingi*), Townsend's ground squirrel (*S. townsendii*), and antelope ground squirrel (*Ammospermophilus leucurus*). Only the Richardson's ground squirrel was abundant, forming colonies in agricultural fields and in areas heavily grazed by cattle. Three species of voles, including sagebrush vole *(Lagurus curtatus*), montane vole (*Microtus montanus*), and long-tailed vole (*M. longicaudus*), were conspicuous and frequently observed in sagebrush and riparian communities.

Evidence of muskrat (*Ondatra zibethicus*) (e.g., tracks, scat, burrows) was abundant along Huntington Creek, Walker Canyon Quad (Segment E), and was also found on Segment H. This species is common to abundant in riparian habitats, aspen, and lacustrine and riverine habitats. This species also occupies

human-made habitats, such as roadside ditches (CDFG 1990). Old bleached scat from both black-tailed jackrabbit and Nuttall's cottontail rabbit (*Sylivagus nuttallii*) and an upper jaw of the latter species were observed in the greasewood flats in the L re-route.

Coyotes (*Canis latrans*) were observed in all portions of the study corridor. Coyotes occur in almost all habitats and successional stages. They frequent open brush, shrub, and herbaceous habitats (CDFG 1990). Badgers (*Taxidea taxus*) were both visually observed and detected by their characteristic burrows. Badgers were recorded in most segments but were most numerous in Segments B and E. Badgers are most abundant in drier open stages of most shrub, forest, and herbaceous habitats (CDFG 1990).

The remains of a bobcat (*Felis rufus*) carcass were found in a water-filled ditch (Slough Creek) along Highway 50 in Segment I. Bobcats use nearly all habitats and successional stages. Its optimal habitats are brushy stages of low and mid-elevation conifer, riparian and pinyon-juniper forests, and all stages of chaparral (CDFG 1990).

According to NDOW resource staff, two common species of bats occur within the study corridor: big brown bat (*Eptesicus fuscus*) and the pallid bat (*Antrozous pallidus*) (personal communication with P. Bradley, biologist, April 11, 2000). The big brown bat has been recorded in virtually every North American vegetation type. The pallid bat is a common species of low elevations and inhabits a wide variety of habitats but is most common in open, dry habitats with rocky areas for roosting (CDFG 1990). According to NDOW resource staff, there are 12-14 other species of bats that also use the area (personal communication with S. Foree, biologist, September 4, 2001). Some of those bats are "special-status species," which are discussed in Section 3.7.

Big Game

Mule deer were observed throughout most of the study corridor. Figure 3.6-1 shows mule deer seasonal range distribution. Mule deer winter range exists from Railroad Pass to the lower slopes of the Diamond Mountains. The area where the Buck Mountain Route leaves Newark Valley and heads northwest toward the south end of Buck Mountain is identified as critical mule deer winter range for the state of Nevada's largest deer herd, the Ruby Mountain herd.

The study corridor crosses big game winter range in two areas: the Dry Hills – Cortez Range winter area (personal communication with K. Wilkinson, BLM Elko Field Office, July 19, 2000) and Diamond Mountains near Newark Pass (personal communication with M. Podborny, NDOW, July 24, 2000). After the route passes over the hydrologic divide between Newark and Huntington Valleys, it would traverse through mule deer spring, summer, and fall habitats. Antelope Summit and Robinson Summit along Segment J are considered critical congregation areas for mule deer in winters with heavy snow (Perkins 2001).

Pronghorn were recorded in Segments B, D, E, I, and J but were most numerous in Segments E and I. Pronghorn habitat is located in Crescent Valley and from the top of Cortez Canyon to the bottom of McClusky Creek. As many as 20 individuals were frequently observed from Cortez Mine to the town of Crescent Valley. Use in the north end of Grass Valley has been limited to a few scattered sightings in the spring (April-June). However, the Dry Hills may be a limited fawning area. The fawning season is mid-April through mid-June. Crucial winter and spring habitat exists from the bottom of the 3-Bar Ranch to Devil's Gate on Highway 50 (Segment I). Segment E of the Buck Mountain Route passes through pronghorn habitat where the route traverses north in Newark Valley, heads northwest toward the south end of Buck Mountain, and proceeds up Newark Valley. As the line nears the south end of Buck Mountain it passes over Barrel Spring, which is located on private land and is the primary water source for pronghorns in this portion of the valley.

Birds

Shorebirds & Waterfowl

In wet years, Slough Creek, which is parallel to Highway 50, floods and ponds (personal communication with M. Podborny, NDOW, August 9, 1999). In both 1998 and 1999, the creek formed large ponds on both sides of the highway. Waterfowl such as mallard (*Anas platyrhynchos*), northern shoveler (*Anas clypeata*), and Canada goose (*Branta canadensis*) are known to breed at these ponds. Because fish did not inhabit the ponds or creek, fish-eating birds such as herons would not be expected to breed at this site. However, numerous shorebirds, including avocets (*Recurvirostra americana*), Wilson's phalaropes (*Phalaropus tricolor*), and black-necked stilt (*Himantopus mexicanus*) were observed approximately 0.25 mile east of the centerline in Crescent Valley (East of the Tenabo Quad). The birds were foraging in the vicinity of Indian Creek and the study corridor. This area is flooded because of dewatering from the Cortez Mine.

Waterfowl and shorebirds are common where Segment A crosses the Humboldt River. In addition to great blue herons (*Ardea herodias*) and snowy egrets (*Egretta thula*), more than a dozen black-crowned night-herons (*Nycticorax nycticorax*) were recorded flying north along the Humboldt River and across I-80 (Dunphy Quad). Black-crowned night-herons nest in colonies, often in mixed colonies with other species of herons and water birds (Ryser 1985). According to NDOW (personal communication with M. Podborny, August 9, 1999), a large mixed colony of black-crowned night-herons and snowy egrets roosts in the dense willow forests southeast of Dunphy and the Horseshoe Ranch (off Highway 306). The study corridor is located approximately 3 miles northeast of the known roost. Sandhill cranes (*Grus canadensis*) are known to nest in the north end of Newark Valley. They nest in grassy marshes and wet meadows with patches of willows. This species was not observed during the field surveys, and the study corridor does not cross suitable nesting habitat.

Raptors

BLM and NDOW manage all raptor species as important and sensitive species. Nests of the following seven species of raptors were located along the study corridor: ferruginous hawk, red-tailed hawk (*Buteo jamaicensis*), golden eagle, Cooper's hawk (*Accipiter cooperii*), prairie falcon (*Falco mexicanus*), great-horned owl (*Bubo virginianus*), and burrowing owl (*Athene cunicularia hypugea*). Golden eagle, ferruginous hawk, burrowing owl, and Swainson's hawk (*Buteo swainsoni*), considered special-status species, are addressed in greater detail in Section 3.7. Although short-eared owls (*Asio flammeus*) were observed hunting and perched in Segments B, D, E, F, and H, nests were not detected.

Two pairs of great-horned owls were observed nesting in the study corridor. Both pairs successfully nested under the I-80 bridges over the Humboldt River in Segment A (Dunphy Quad). Two red-tailed hawk nests were found, one each in Segments A and C. In both cases, the nests were more than one mile from the centerline. Foraging red-tailed hawks were observed in all segments except for A and G. Swainson's hawks were observed on Segments B, C, and D, but no nests were found.

A Cooper's hawk nest was located in the K re-route (Cortez Canyon Quad) where the route alternative would traverse a drainage. Two fledglings were observed in their nest in a pinyon tree. American kestrels (*Falco sparverius*) were numerous and observed in all segments except for B, C, D, and the K re-route. Pairs were observed and were probably nesting within the vicinity of the study corridor.

Northern harriers (*Circus cyaneus*) were recorded in Segments A, B, C, E, and F. A female bird was observed in a riparian area in Segment A (near the Humboldt River). Other nests were not located, although a pair of birds observed hunting near Beck Pass (Segment E) probably have a nest in Newark Valley. One immature harrier was also noted in this area.

FIGURE 3.6-1: MULE DEER SEASONAL RANGE

Primary breeding sites for prairie falcons include undisturbed cliff faces. This bird of prey is conspicuous as it forages over grasslands and other open habitat (Ryser 1985). The only nesting prairie falcons detected were a pair that successfully fledged at least two young in the K re-route. In this case, their nest was situated approximately 0.25 mile west of the centerline crossing where the line traverses the summit. Individual birds were observed in Segments A, B, E, F, H, and J.

Upland Game Birds

Four species of upland game birds were found within the study corridor: sage grouse, chukar, mourning dove (*Zenaida macroura*), and California quail (*Callipepla californica*). Sage grouse are discussed in greater detail in Section 3.7. Chukar were recorded in Segments B and C. These birds are uncommon to common permanent residents of arid, rocky annual grassland and bush and scrub habitats with available water. They occur in the Great Basin vegetation associations. Chukar forage on the ground and eat seeds of cheatgrass, other grasses, and exotic annual forbs (CDFG 1990).

Mourning doves were common and widespread throughout most of the habitat types in the study corridor. However, this species was most abundant outside the vicinity of the study corridor in Diamond Valley, along the west face of the Diamond Mountains. California quail with young were observed in Segment B. These birds are commonly found in shrub, scrub and brush, open stages of conifer and deciduous habitats, and margins of grasslands and croplands.

Other Bird Species

Common ravens (*Corvus corax*) were commonly seen throughout the entire study corridor. However, they were most numerous in the valleys of Segments B and I. Active raven nests were recorded on wooden power poles in the L re-route, on rock outcrops, and on both wooden power poles and on the H-Frame metal power poles in both Segments B and I. In the former case, an active raven nest was located approximately every quarter mile for a distance of more than 5 miles.

Reptiles

Seven species of reptiles were recorded in or near the study corridor: western whiptail (*Cnemidophorus tigris*), leopard lizard (*Gambelia wislizenii*), sagebrush lizard (*Sceloporus gracious*), western fence lizard (*S. occidentalis*), gopher snake (*Pituophis melanoleucus*), desert horned lizard (*Phrynosoma platyrhinos*), and desert short-horned lizard (*P. douglassi*). The desert short-horned lizard (*P. douglassi*) was outside of its mapped range. Further information about the sighting is provided in the baseline Wildlife Survey report (Summit Envirosolutions 2000).

Amphibians

The only amphibian observed in or near the study corridor was the spadefoot toad *(Scaphiopus intermontanus*). This species was recorded in Segments A, B, D, and E. Recent metamorphs were observed in Segment D. Larvae were observed in the artificial ponds near Dunphy 0.5 mile east of the centerline crossing in Segment A (Dunphy Quad). Spadefoot toads can travel dozens of miles from a water source and can inhabit portions of the study corridor away from water. In the evening, adult-sized toads were observed crossing Highway 278 east of Segment D.

Fish

Trout were observed in Huntington Creek, Walker Canyon Quad (Segment E). According to NDOW, these fish are rainbow trout (*Oncorhynchus mykiss*) and brown trout (*Salvelinus trutta*) (personal communication with M. Podborny, Biologist, August 9, 1999). The study corridor does cross Huntington Creek. Brook trout (*Salvelinus fontinalus*) and fingerlings were noted in Simpson Creek, Eureka Quad (Segment I). The study corridor does not cross Simpson Creek. The creek parallels the study corridor alignment for approximately 5 miles, but the creek's channel is located several hundred feet lower in elevation and is no closer than 1,500 feet from the corridor.

Invertebrates

The shells of several unidentified bivalves were collected from the following creeks and springs in the project vicinity: Defue Springs, Walker Canyon Quad, Segment E; Huntington Creek, Walker Canyon Quad, Segment E; and Gleason Creek, Robinson Summit Quad, Segment J.

The majority of the springs and creeks along the five route alternatives were surveyed for all species, including springsnails (Pyrgulopsis spp.). None were noted during the field surveys (personal communication with S. Fox, August 30, 2001). However, smaller springs located outside the 500-foot wide study area corridor were not surveyed for springsnails. Impacts to springs could potentially occur during blasting or grading activities. Blasting could affect springs located up to 1,000 feet from the blast site by affecting the flow of the springs, as explained on page 3.3-16 of the EIS, under Impact Water-5: Potential Damage to Springs and Wells.

WILDLIFE HABITAT

Nine main habitat types were identified in the study corridor: sagebrush, salt desert scrub, pinyon-juniper woodland, greasewood, crested wheatgrass, riparian, winterfat, cultivated, and developed/disturbed lands. Table 3.6-1 summarizes habitat associations of common wildlife species found in the project area. Table 3.6-2 shows the extent to which each habitat type exists within the study corridor.

Sagebrush Habitats

The study corridor is dominated by sagebrush (*Artemisia* spp.) habitats (approximately 68%), including: Basin big sagebrush, mountain big sagebrush, Wyoming big sagebrush, black sagebrush, and low sagebrush. They occupy a variety of elevational, soil types, and climatic ranges and provide habitat for several species during critical seasons (e.g., breeding season). Wildlife species, such as the sage grouse and pygmy rabbit (*Brachylagus idahoensis*) (discussed in Section 3.7 Special-Status Species) depend on sagebrush for food, cover, and breeding habitat.

Salt Desert Shrub Habitat

Salt desert shrub habitat is defined as those low elevation landscapes in the temperate deserts of the Great Basin and surrounding areas in the western U.S. dominated by low growing chenopod shrubs. Shadscale (*Atriplex confertifolia*), black greasewood (*Sarcobatus vermiculatus*), and winterfat (*Krascheninnikovia lanata*) are possibly the most extensive in their dominance throughout the salt desert shrub habitat. The Great Basin dry lake beds or playas tend to be surrounded by halophytes. Moving toward these playas from higher to lower elevations (i.e., from sagebrush/grass to the salt desert shrub habitat), the precipitation decreases. These are areas of high summer temperatures, cold blowing snow in the winter, and high evaporation rates.

Pinyon-Juniper Woodland Habitat

Junipers are more widespread geographically and elevationally, going into both drier and colder habitats than the pinyons. In this portion of the Great Basin, Utah juniper (*Juniperus osteosperma*) and pinyon pine (*Pinus monophylla*) form the tree guild. Tree heights and canopy cover vary enormously, usually increasing with elevation. Understory dominants are even more diverse than the trees, varying with seasonality, effectiveness of precipitation, and temperature.

Greasewood Habitat

This habitat type is dominated by black greasewood (*Sarcobatus vermiculatus*). The primary factors determining this site are related to soils. Soils are poorly drained with seasonal ponding. Grasses include

basin wildrye *(Elymus cinereus*) and inland saltgrass (*Distichlis spicatum*). The shrub component includes the species from the salt desert shrub habitat type.

TABLE 3.6-1: WILDLIFE SPECIES OBSERVED

WILDLIFE HABITAT TYPE	COMMON WILDLIFE SPECIES			
Sagebrush	Loggerhead shrike Chukar Horned lark Sage thrasher Lark sparrow Black-throated sparrow	Sage sparrow Brewer's sparrow Western bluebird Meadowlark Coyote Mule deer	Pronghorn Deer mouse Sagebrush vole American badger Black-tailed jackrabbit	Antelope ground squirrel Townsend's ground squirrel Sagebrush lizard Desert horned lizard Western fence lizard
Salt Desert Shrub, Winterfat, Greasewood, and Crested Wheatgrass	Loggerhead shrike Northern harrier Short-eared owl Horned lark Lincoln sparrow	Northern mockingbird Brewer's sparrow Mourning dove Long-billed curlew Richardson's ground squirrel	Mule deer Deer mouse Black-tailed jackrabbit Townsend's ground squirrel American badger	Coyote Long-tailed vole Leopard lizard Sagebrush lizard Spadefoot toad
Pinyon-Juniper Woodlands	Black-throated gray warbler Yellow-rumped warbler Cooper's hawk Red-tailed hawk Great-horned owl Hairy woodpecker	Western tanager Juniper titmouse Mountain chickadee Dark-eyed junco Cassin's finch Red crossbill	Gray flycatcher Pinyon jay Mountain bluebird Northern flicker Golden-mantle ground squirrel	Woodrat Deer mouse Bobcat Gopher snake Mule deer
Cultivated	American kestrel Prairie falcon	California quail	Pronghorn	Mule deer
Riparian	Northern harrier Black-billed magpie Yellow-headed and red-winged blackbird Brown-headed cowbird MacGillivray's warbler	Song sparrow Northern oriole Cliff swallow Bank swallow Wilson's phalarope American avocet Yellow-breasted chat	Black-necked stilt Mallard Black-crowned night-heron Great blue heron Striped skunk Cottontail rabbit	Pocket gopher Montane vole Shrew Gopher snake Spadefoot toad Trout Mourning dove

Source: Summit Envirosolutions 2000

TABLE 3.6-2: WILDLIFE HABITATS AND PLANT COMMUNITY TYPES ALONG THE STUDY CORRIDOR

Wildlife Habitat Type	Corresponding Dominant Plant Species	Percentage of Study Corridor
Wyoming Big Sagebrush	Wyoming big sagebrush	48.7%
Black Sagebrush	Black sagebrush	12.8%
Mountain Big Sagebrush	Mountain big sagebrush with smaller amounts of antelope bitterbrush, green rabbitbrush, and gray horsebrush	4.8%
Basin Big Sagebrush	Basin big sagebrush and smaller amounts of rubber and green rabbitbrush	0.9%
Low Sagebrush	Low sagebrush	0.8%
Salt Desert Shrub	Shadscale, black greasewood, and winterfat	11.5%
Pinyon-Juniper Woodland	Utah juniper and pinyon pine	10.9%
Greasewood	Black greasewood	6%
Crested Wheatgrass	Crested wheatgrass	2.8%
Riparian	Herbaceous species including *Carex nebrascensis*, *C. rostrata*, and *Juncus balticus*	0.2%
Winterfat	Winterfat and smaller amounts of Indian ricegrass and shadscale	0.2%
Cultivated	Alfalfa fields, small grain fields, and cultivated pastures	0.2%
Developed/Disturbed	Roads, gravel pits, buildings, parking lots, and similar human-caused disturbances	0.1%

Crested Wheatgrass Habitat

This habitat type includes areas seeded with crested wheatgrass (*Agropyron cristatum*). Crested wheatgrass was usually seeded into an area with one of the big sagebrush or greasewood cover types.

Riparian Habitat

In all riparian settings, natural processes have evolved to develop a balance among the soil, water, and vegetation resources. Some of the most important herbaceous species that buffer the hydrologic forces of water in the Great Basin include: *Carex nebrascensis*, *C. rostrata*, and *Juncus balticus*. Although riparian areas constitute only a fraction of the total land area, they are more productive in terms of plant and animal species diversity and biomass per unit than the remainder of the land base.

According to the Vegetation Survey report (SEI 2000), the route alternatives combined cross approximately 1,100 "jurisdictional waters of the U.S." Not all of these "waters" are perennial, provide significant riparian wildlife habitat, or meet the legal definition of "waters of the U.S." The Vegetation Survey report tallied all blue-line streams shown on USGS topographic quadrangle maps (i.e., lines that indicate any type of drainage) (SEI and Tetra Tech EMI 2000). Wetland areas are discussed in greater detail in Section 3.4, Vegetation.

Winterfat Habitat

This habitat type, dominated by winterfat (*Krascheninnikovia lanata*), is usually found as an inclusion in the salt desert shrub type. In addition to winterfat, other important species are those of the salt desert shrub type, including Indian ricegrass (*Oryzopsis hymenoides*) and shadscale. It occurs on alluvial flats, lake plains, and lower fan piedmonts.

Cultivated Lands

This habitat type includes all cultivated areas, including alfalfa fields, small grain fields, and cultivated pastures. Several species of rodents, waterfowl, and raptors have adapted to cultivated areas (CDFFP 1988).

Developed/Disturbed

The developed/disturbed category includes roads, gravel pits, buildings, parking lots, or similar human-caused disturbances. Measured as acres of potential wildlife habitat within the 500-foot study corridor, the developed/disturbed category along the study corridor represents approximately 0.1%.

WILDFIRES

The 1999 and 2000 wildfires impacted wildlife habitats ranging from pinyon-juniper woodlands to salt desert shrub. Segments B, C, E, L, and J of the route alternatives traverse five main burn areas: Trail Canyon and Mule (Segment B), Frenchie (Segment C), Sadler (Segment E), and Crusoe (Segment J). These burn areas are mapped on Figure 3.4-1 in Section 3.4. The vegetation and wildlife survey data were collected before the fires occurred in summer of 1999 and in 2000.

3.6.3 ENVIRONMENTAL CONSEQUENCES

The following section examines the project's likely impacts on common wildlife and wildlife habitats. As many of the route alternatives share segments (e.g., Segments A and J are common to all of the routes), the analysis first addresses impacts that are common to all of the route alternatives. It then examines impacts specific to each of the route alternatives. This serves to reduce redundancy in discussion of the impacts and to present a clearer comparison of the alternatives. A discussion of the No Action Alternative is also included.

SIGNIFICANCE CRITERIA

The following criteria were used to evaluate the significance of the impacts. Project construction and operation activities would be considered to have a significant impact on wildlife and wildlife habitat if they would:

- Substantially affect riparian habitat.
- Substantially affect habitats considered regionally rare or uncommon.
- Substantially interfere with the movement of native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or substantially impede the use of native wildlife nursery sites.
- Conflict with the provisions of an adopted Habitat Conservation Plan or other approved local, regional, or state Habitat Conservation Plan.
- Cause the substantial long-term loss and permanent reduction or substantial alteration of existing wildlife habitat or wildlife populations.

ENVIRONMENTAL IMPACTS - COMPARISON OF ALTERNATIVES

Project construction and operation would produce direct and indirect impacts to common wildlife and wildlife habitats. Direct effects include wildlife habitat disturbance, big game disturbance, and bird collisions. Indirect effects include those associated with increased human presence in remote areas and increased vehicle-related mortalities. Some impacts would be short-term (e.g., habitat removal during construction) and others long-term (e.g., habitat removal at tower locations).

Impacts Common to All Route Alternatives

The following section presents impacts to wildlife and wildlife habitat that would be common to all of the route alternatives (i.e., they would occur with any of the route alternatives).

- ***Impact Widlife-1: Wildlife Habitat Disturbance and Removal***

  Temporary wildlife habitat disturbance and removal would be caused by construction activities. Vegetation removal, earth disturbance, and improvements to some existing access roads would be required to provide access to construction equipment and to install the transmission line towers, wires, and substation improvements. Tower installation requires clearing approximately 0.7 acre at each pole assembly and erection area. Access needs require clearing a centerline travel route for construction vehicles (12-15 feet wide on average, but expanding to 30 feet wide in rough terrain), clearing new spur roads to allow vehicles to move from existing access roads to the tower sites, and some improvements to existing dirt roads. Table 3.6-3 provides an estimate of the temporary habitat disturbance associated with the centerline travel route for the various routes. These construction activities would temporarily reduce a small fraction of habitat available to a number of wildlife species. Revegetation of disturbed areas following construction (described in Chapter 2 and Appendix E) would make this a less-than-significant impact.

  Permanent wildlife habitat removal would occur at the tower sites and the substation expansion areas. Each H-frame tower requires two 3-foot diameter holes, while each angle tower requires three 3-foot diameter holes and 10-12 buried anchors. Depending on the length of the route alternative, there would be 725 to 820 H-frame towers and 25 to 45 angle towers. The Falcon substation expansion would remove 3.2 additional acres, and the Gonder substation would remove 6.2 additional acres. These actions do not conflict with the RMPs for the project area as they would not cause a substantial loss of wildlife habitat. Considering the extensive wide open lands and wildlife habitat that exist around the transmission line and the relatively small amount of land required for the tower poles and substations, this impact would be less-than-significant. Issues related to invasive non-native species invasion is covered in Section 3.5, Invasive Non-Native Species. Habitat restoration is described in the Reclamation Plan in Appendix E.

TABLE 3.6-3: ESTIMATED TEMPORARY DISTURBANCE TO WILDLIFE HABITAT FROM CONSTRUCTION ACTIVITIES ON THE CENTERLINE TRAVEL ROUTE (IN ACRES)

Route Alternative		Basin Big Sagebrush	Mountain Big Sage-brush	Wyoming Big Sage-brush	Black Sage-brush	Low Sage-brush	Salt Desert Shrub	Winterfat	Grease-wood	Crested Wheat-grass	Pinyon-Juniper	Riparian	Cultivated	Developed / Disturbed	Hoary Cress / Other Noxious Weeds	Total Alternative Corridor
Crescent Valley (a) and (b) Route Alternatives																
(a)	Acres	0.3	31.1	270.9	105.8	3.4	118.8	1.6	47.4	9.3	79.8	2.8	2.7	0.7	1.5	**676.1**
	%	0.0%	4.6%	40.1%	15.6%	0.5%	17.6%	0.2%	7.0%	1.4%	11.8%	0.4%	0.4%	0.1%	0.2%	**100.0%**
(b)	Acres	0.3	35.4	271.9	97.5	3.4	118.8	2.2	46.1	9.3	85.1	2.8	2.7	0.7	1.5	**677.8**
	%	0.0%	5.2%	40.1%	14.4%	0.5%	17.5%	0.3%	6.8%	1.4%	12.6%	0.4%	0.4%	0.1%	0.2%	**100.0%**
Pine Valley (a) and (b) Route Alternatives																
(a)	Acres	0.0	30.8	294.3	85.6	8.1	80.7	1.6	42.5	26.7	73.4	2.8	2.7	0.7	1.1	**651.1**
	%	0.0%	4.7%	45.2%	13.1%	1.2%	12.4%	0.3%	6.5%	4.1%	11.3%	0.4%	0.4%	0.1%	0.2%	**100.0%**
(b)	Acres	0.0	35.0	295.3	77.4	8.1	80.7	2.2	41.2	26.7	78.8	2.8	2.7	0.7	1.1	**652.8**
	%	0.0%	5.4%	45.2%	11.8%	1.2%	12.4%	0.3%	6.3%	4.1%	12.1%	0.4%	0.4%	0.1%	0.2%	**100.0%**
Buck Mountain Route Alternative																
	Acres	10.7	31.1	283.7	75.9	6.8	63.6	1.3	21.5	20.6	92.0	0.9	0.0	0.0	0.4	**608.3**
	%	1.8%	5.1%	46.6%	12.5%	1.1%	10.5%	0.2%	3.5%	3.4%	15.1%	0.1%	0.0%	0.0%	0.1%	**100.0%**

** Estimates are based on assumption of a 30-foot wide centerline travel route for construction equipment, which represents a worst-case scenario. The actual width of the centerline travel route will likely be only 12-15 feet for much of the route.*

Source: SEI and Tetra Tech EMI 1999-2000 field surveys.

❑ ***Impact Wildlife-2: Disturbance of Mule Deer and Pronghorn in Seasonal Habitat***

Short-term disturbance and loss of mule deer and pronghorn habitat would occur during construction activities within the construction corridor, on spur roads, at material yards, and at tower assembly and erection areas. Critical life stages of mule deer and pronghorn are closely tied to annual seasons; they use different portions of their range at different times during the year (FERC 1995). Access to winter ranges for mule deer and pronghorn is important because these areas represent an important source of food during the critical winter months. As construction would affect only a small percentage of available range for mule deer and pronghorn, this is not considered a significant impact. However, the following mitigation measure can be used to avoid disturbance during seasonal migration periods. Installation of the towers and expansion of the substations would result in a minor long-term loss of big game habitat; however, this would not be a significant impact.

❑ ***Mitigation Measure Wildlife-2***

Construction activities would be scheduled to avoid the winter and early spring use period for mule deer and pronghorn, from November 1 through April 15 (personal communication with K. Wilkinson, BLM Elko Field Office, July 19, 2000). One area common to the Pine Valley and Buck Mountain Alternatives would require seasonal restrictions, the Dry Hills – Cortez Range winter area (Segment C). Another area is in the Diamond Mountains on Segment I. Seasonal restrictions on construction activities would be required over the Diamonds (personal communication with D. Crimmins, BLM, Battle Mountain Field Office, November 6, 2001). Additionally, Antelope Summit and Robinson Summit along Segment J are considered critical congregation areas for mule deer in winters with heavy snow (Perkins 2001). These areas would

require seasonal closure if winter snows become excessive and would be defined in the field by BLM or NDOW biologists should conditions warrant closure. Mule deer range by alternative is summarized in Table 3.6-4.

TABLE 3.6-4: MULE DEER RANGE BY ROUTE ALTERNATIVE

ROUTE LENGTH WITHIN MULE DEER RANGE							
Route Alternative	Winter Range		Summer Range		Yearlong Range		Total Length
	Miles	%	Miles	%	Miles	%	(Miles)
Crescent Valley							
(a)	10.03	5.4%	8.17	4.4%	19.55	10.5%	185.93
(b)	12.21	6.6%	8.17	4.4%	19.55	10.5%	186.39
Pine Valley							
(a)	10.66	6.0%	8.17	4.6%	19.55	10.9%	179.06
(b)	12.84	7.2%	8.17	4.6%	19.55	10.9%	179.52
Buck Mountain							
	2.66	1.6%	10.67	6.4%	54.02	32.3%	167.28

Source: DOI 1987a, 1986b, 1987c. BLM Digital and Hardcopy Data, 1999.

❑ ***Impact Wildlife-3: Loss and Displacement of Wildlife***

Direct mortality of small mammals, reptiles, and other less mobile species is expected as a result of the use of construction vehicles and equipment and increased human presence after construction. Off-road overland travel within the corridor would cause the loss and disturbance of some wildlife and wildlife habitat (e.g., small mammals or reptiles whose burrows would be within the corridor). However, direct wildlife mortalities and displacement of wildlife are expected to be minor as a result of construction activities due to the minimal amount of habitat physically disturbed relative to the surrounding available habitat. Animals displaced due to the project would be able to return to the construction area once construction activities have ceased. No mitigation measures are necessary.

❑ ***Impact Wildlife-4: Indirect Impacts on Wildlife from Increased Human Presence and Access***

Construction, reclamation, and maintenance activities would increase human presence in the area and displace wildlife to other habitats that may or may not be able to support additional individuals. This increased human presence could reduce the reproductive success of local wildlife populations, including songbirds, small mammals, and reptiles, as well as result in burrow disturbance and nest abandonment.

The right-of-way corridor and new spur roads may lead to increased human access, intrusion, illegal hunting, harassment of wildlife, off-road vehicle use, and noise. This increased human access may cause direct (e.g., mortality due to increased vehicular activities) or indirect (e.g., poaching) loss of wildlife. Poaching is often the greatest adverse impact to wildlife as a result of increased human access, particularly for big game species (BLM 1996). Large raptors, predators, and roosting bats may also be disturbed. In addition, the use of the right-of-way corridor and new spur roads as livestock herding driveways could impact wildlife forage. These impacts would be adverse but not significant. Some areas of critical winter habitat for mule deer are prone to excessive human access. In these areas, additional access is not desired and could be considered a significant impact. However, these impacts could be minimized by implementing the mitigation measure below.

- ***Mitigation Measure Wildlife-4***

  During construction activities, exclusionary flagging or fencing will be used to protect sensitive areas. Also, the centerline travel route and new spur roads would be restricted or signage would be posted to discourage unauthorized vehicle access. After construction, new spur roads and portions of the centerline travel route leading to sensitive areas would be revegetated and reclaimed to preclude unauthorized overland vehicle access. Once these areas are closed, inspections of the lines by SPPC personnel would be conducted by the occasional use of ATVs or by helicopter.

- ***Impact Wildlife-5: Potential Bird Electrocutions and Collisions***

  The project would involve additions to two substations: the Falcon substation near Dunphy and the Gonder substation northeast of Ely. These substations may pose electrocution hazards for some birds. The wires, buswork, and support structures would attract some bird species because they provide potential roosting, perching, and nesting sites. Line switching equipment and two reactors would be added at the Falcon substation. Two reactors to control voltage and two 345/230 kV, 300 MVA transformers would be added to the Gonder substation. The heat generated by these transformers may attract wintering birds (Aspen 1995). Birds may be electrocuted when making conductor-to-conductor or conductor-to-ground contact with uninsulated equipment. Both substations would have high voltage components (230 kV and 345 kV) that provide sufficient conductor clearance to minimize bird electrocutions.

  The proposed transmission line would consist of tubular steel H-frame structures with conductors and wires spaced approximately 22 feet apart. Because of the distance between the conductors and wires, the potential for bird electrocutions is very low on these structures. Usually, bird electrocutions take place when the wingspan of birds exceeds the distance between two conductors or between a conductor and a wire. Raptors are usually more at risk to this type of electrocution because of their size, distribution, and behavior. The potential for raptor electrocution does not exist as the wire spacing is approximately 22 feet and raptor wingspans are significantly smaller (e.g., golden eagle wing spans generally do not exceed 10 feet).

  Bird collisions with transmission lines may occur when a transmission line or other aerial structure transects a daily flight path used by a concentration of birds, or when migrants are traveling at reduced altitudes and encounter tall structures in their path. These collisions generally occur during inclement weather or low light levels (Avian Power Line Interaction Committee [APLIC] 1994). In general, raptors are not prone to collisions with transmission lines. Studies support these claims because of raptors' keen eyesight, soaring or slow flapping flight, maneuverability in flight, use of poles as hunting perches thereby becoming conditioned to the presence of poles, and lack of "V" formations in flight (Olendorff et al. 1986). Other studies (Edison Electric Institute 1980) suggest that collision hazard risk is heightened for the species that fly fast and direct during normal light conditions that are preoccupied by activities such as pursuing prey, engaging in courtship, defending a territory, or escaping a predator.

  The risk of bird collisions is higher along wetlands, valleys that are bisected by transmission lines, and within narrow passes where transmission lines are perpendicular to flight paths (APLIC 1994). A study conducted in 1983 found that 90% of all transmission line mortalities of waterfowl occurred at wetland sites supporting large concentrations of waterfowl (Faanes 1983). In studies conducted in the northern Great Plains, transmission lines located 400 meters from water sources presented higher associated mortality than transmission lines more than 400 meters from water (Faanes 1983).

  One of the largest concentrations of waterfowl and/or shorebirds in the study corridor occurs where the transmission line would cross the Humboldt River (i.e., Segment A, common to all of

the route alternatives). Mitigation Measure Wildlife-5 would minimize the risk for waterfowl/shorebird collision.

❑ ***Mitigation Measure Wildlife-5***

Bird flight diverters would be installed on the transmission line at the Humboldt River crossing (part of Segment A) and the inland saltgrass flat at Whirlwind Valley (Segment B and Segment C), Cortez Mine de-watering area in Crescent Valley (Segment B) and Slough Creek (Segment G). Flight diverters should be of a design that improves the ability of birds to see the line in all light levels (e.g., through size, shape, and possibly a variety of colors). The number and color configurations recommended by the manufacturer or researchers should be used. Diverters should be maintained/replaced as needed for the life of the project. They would be installed on lines extending between 2-3 towers where the transmission line would cross the Humboldt River, and as appropriate in other areas with concentrations of waterfowl and/or shorebirds. Final installation locations within the areas noted above, the flight diverter product, and quantities to be installed will be defined in the COM Plan.

❑ ***Impact Wildlife-6: Impacts to Migratory and Resident Birds***

Project construction activities may affect nesting raptors and passerines. Impacts to ferruginous hawk, golden eagles, and burrowing owls are discussed in Section 3.7, Special-Status Species. Impacts to nesting red-tailed hawks, Cooper's hawks, prairie falcons, American kestrels, and great-horned owls would depend on the nest location relative to the transmission line, phase of their breeding period, and duration of the disturbance during construction. Impacts to breeding raptors are not anticipated based on field surveys. One exception is along the K re-route (see Impact Wildlife-10: Impact to Nesting Raptors). Breeding passerines could be adversely affected by project construction activities and result in nest abandonment, loss of territory, and loss of productivity for that breeding season. The MBTA provides legal protection for any migratory bird or part, nest, or egg of such bird listed in wildlife protection treaties between the United States and Great Britain (on behalf of Canada), Mexico, Japan, and the former USSR. Although loss of an active passerine nest site would significantly affect the specific breeding pair affected by the project, it would not significantly affect the local avian population. However, destruction of eggs or young would be a violation of the MBTA; therefore, the following mitigation measure is provided.

❑ ***Mitigation Measure Wildlife-6***

SPPC would not conduct land clearing activities in areas of active nests (i.e., vegetation removal and road improvements) during the avian breeding season (April 1 – August 31). The start and end dates of the of the season may be modified by the BLM, based on site specific information, such as elevation, habitat, etc. If land clearing takes place during the avian breeding and nesting season, a qualified biologist would conduct pre-construction surveys along the selected route to identify nests or evidence of breeding birds (i.e., territorial response, carrying of nesting materials, transportation of food, and mating pairs). If active nests are located or evidence of nesting is observed, a protective buffer zone would be delineated around the area. A buffer of 100 feet either side of the nest is suggested. After August 31, construction activities may commence in these areas. Implementation of this mitigation measure would reduce impacts to species protected under the Migratory Bird Treaty Act.

❑ ***Impact Wildlife-7: Increased Predation from Wildlife***

The tubular steel H-frame towers would provide artificial perches for raptors in areas of open habitat. These tall structures provide adequate perching sites to survey large areas of habitat for hunting. Wildlife species, especially raptors and ravens, would receive a competitive advantage as a result of these artificial perches. Habitats previously used only to hunt occasionally could

become routine hunting areas because of the increased number of available perches (Ryser 1985). Ravens could also use these structures as perches or nesting locations. In areas with concentrations of shorebirds, waterfowl, or sage grouse, the potential impact from increased predation is considered an adverse impact (personal communication with K. Wilkinson, BLM Elko Field Office, February 22, 2001). Impacts associated with sage grouse are discussed further in Section 3.7, Special Status-Species. Because the species that may inhabit these areas are considered important by local BLM biologists, mitigation measures are recommended.

❑ ***Mitigation Measure Wildlife-7***

SPPC will incorporate perch-deterrent design features for all transmission towers and place perch-deterrent devices on the crossarms of the transmission structures at the Humboldt River crossing along Segment A and other areas frequented by shorebirds or waterfowl such as the inland saltgrass flat at Whirlwind Valley (Segment B and C), Cortez Mine dewatering in Crescent Valley (Segment B) and Slough Creek (Segment G) to discourage raptor and corvid perching. The installation of perch-deterrent devices would be the primary method of reducing raptor and corvid use of transmission lines. Perch deterrents will be installed across areas of concern and will exceed one span beyond these sensitive areas; however, ultimate locations for perch deterrents will be finalized in the COM Plan.

❑ ***Impact Wildlife-8: Impacts to Wildlife from Water Resources***

Water resources, such as springs, are important for wildlife. The availability of drinking water plays an important role in the distribution of wildlife in desert ranges. During drought years, this role may be critical for upland game birds, mule deer, pronghorn, and other mammals. Construction activities in proximity to water sources may create additional stress to wildlife. Given that the transmission line would cross only a small number of water sources and construction impacts would only be temporary, this would not be a significant impacts to wildlife species. However, the following mitigation measure is recommended to minimize impacts to pronghorn antelope and mule deer.

❑ ***Mitigation Measure Wildlife-8***

To the extent practical, project construction activities should be scheduled to avoid proximity to water sources in active mule deer fawning areas. If needed, SPPC would provide alternative water sources away from the construction sites.

❑ ***Impact Wildlife-9: Impacts to Riparian Habitat***

It is expected that impacts to riparian habitat, including perennial and seasonal water sources, would be avoided through strategic placement of towers outside of riparian habitat. However, if during preparation of the COM Plan sensitive riparian areas are identified that extend beyond the maximum transmission line span width, BLM would require appropriate permits and mitigation measures to minimize disturbance and reduce impacts to a less-than-significant level.

❑ ***Impact Wildlife-11: Impacts to Endemic Springsnails***

Impacts to endemic springsnails could occur as a result of direct impacts to springs. Flows of springs could be affected by blasting or grading activities. With implementation of the following mitigation measure, in addition to Mitigation Measures Water-5a through 5c (described on page 3.3-16 of the EIS), the impact would be less-than-significant.

❑ ***Mitigation Measure Wildlife-11***

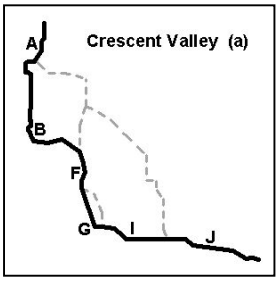
Pre-construction surveys for endemic springsnails shall be conducted at springs within 1,000 feet of blasting sites and in areas where physical impacts to springs might occur (e.g., from access road improvements, vehicle traffic). Where endemic snails may occur, alternative blasting

techniques would be used. Tower footing excavations located 500 to 1,000 feet away from a spring would require multiple small blasts sufficient to excavate tower footings. Tower footing excavations within 500 feet of a spring would require multiple small blasts in areas where this technique can be demonstrated to be safe to a hydrologist or the BLM Field Monitor. If multiple blasts cannot be demonstrated to be safe and may affect a spring within 500 feet of a tower footing excavation, non-blasting excavation techniques would be used (i.e., rock hammers). Soil disturbance within 100 feet of a spring containing endemic snails would be prohibited. All construction activities would be kept from impacting these springs, including vehicular, foot or any other physical activity that may harm the integrity of these springs. Thus, with these mitigations, springs would be protected; replacement water would not be an issue. Replacement water quality would be addressed in the Construction, Operation and Maintenance Plan (COM Plan).

Alternative-Specific Impacts

In addition to the impacts common to all route alternatives discussed above, the following presents impacts associated with specific route alternatives. Because the route alternatives differ by one or more segments, these alternative-specific impacts are best discussed in terms of their differentiating segments.

Crescent Valley (a) Route Alternative



The Crescent Valley (a) route alternative is comprised of Segments A, B, F, G, I, and J. In addition to the impacts common to all route alternatives discussed above (i.e., Impact Wildlife-1 through 9), specific impacts for the Crescent Valley (a) route alternative are listed below by their general location (segment).

Segment B

The Crescent Valley (a) route alternative would pass by two areas with large concentrations of waterfowl and/or shorebirds. Whirlwind Valley is a saltgrass flat with large concentrations of long-billed curlew (*Numenius americanus*). Another area that contains concentrations of shorebirds is approximately 0.25 mile east of the centerline in Crescent Valley and is associated with the Cortez Mine dewatering discharge area. As described under Impact Wildlife-5, bird collisions with transmission lines may occur when the line transects a flight path used by a concentration of birds. Additionally, potential impacts associated with increased predation in these areas would need to be mitigated as described in Impact Wildlife-7.

Bird flight diverters and perch deterrents (see Mitigation Measure Wildlife-5 and Mitigation Measure Wildlife-7) would be utilized in these two locations to minimize potential collisions and predation. The COM Plan would identify how many spans of the transmission lines would need flight diverters and perch deterrents at both locations. No new impacts were identified for Segment F.

K re-route (along Segment B)

During the field surveys in 1999 and 2000, an area with sensitive resources was identified near the Cortez Mountains along Segment B. The K re-route shown on Figure 3.6-1 was drawn as a possible way to re-route a portion of Segment B to avoid these resources. Thus, the following impact on the K re-route is being analyzed.

❑ ***Impact Wildlife-10: Impact to Nesting Raptors***

A prairie falcon pair was identified nesting on the rock outcrops near the K re-route. A Cooper's hawk nest was also identified near the K re-route. Thus, if the K re-route is selected as a partial realignment of Segment B, this could have an adverse impact on nesting raptors.

❑ ***Mitigation Measure Wildlife-10***

Pre-construction surveys would be performed to identify nesting raptors. If nesting is occurring near the K re-route, no construction activities would be allowed during the nesting season (i.e., from March 31 to July 31). Construction activities may resume once the young raptors have fledged and left the area (i.e., after July 31). No trees with raptors' nests would be cut without prior approval from NDOW and/or the BLM.

Segment G

Segment G would cross an area with seasonal concentrations of waterfowl and/or shorebirds located at Slough Creek, which is parallel to Highway 50. As discussed in Impact Wildlife-5, there would be potential for waterfowl and/or shorebirds to collide with the transmission lines, which would be an adverse but less-than-significant impact. However, mitigation is recommended to minimize this impact.

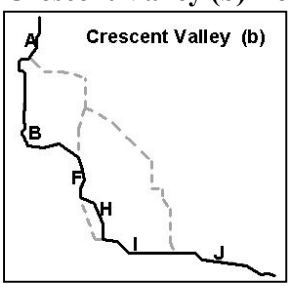
Bird flight diverters would be used on the transmission line at Slough Creek (south end of Segment G), as described in Mitigation Measure Wildlife-5. The COM Plan would identify how many spans of the transmission lines would need flight diverters.

As described under Impact Wildlife- 7, impacts around Slough Creek would require mitigation for potential impacts associated with perching birds of prey. By implementing Mitigation Measure Wildlife – 7, placement of perch deterrents would reduce these potential impacts.

Segment I

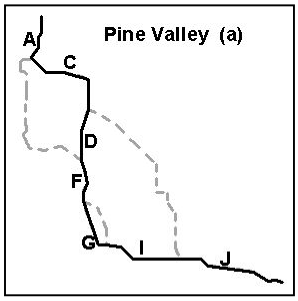
The proposed transmission line would be located in the vicinity of a mule deer seasonal range designated as crucial by NDOW: in the Diamond Mountains near Newark Pass under Battle Mountain's jurisdiction (personal communication with M. Podborny, NDOW, July 24, 2000). Although mule deer winter range also exists from Railroad Pass to the lower slopes of the Diamond Mountains, the route alternative remains in Huntington Valley away from the foothills. Therefore, the project would not affect winter habitat for mule deer from Railroad Pass to the Diamond Mountains. However, construction activities at the edge of mapped crucial winter range at Newark Pass could potentially cause disturbance of mule deer and pronghorn. Although no fawning areas have been identified in this area, fawning could occur. During development of the COM Plan, BLM wildlife biologists would determine if it is necessary to schedule construction activities to avoid the winter and early spring use period in this area (see Mitigation Measure Wildlife-2). Raptors (i.e., golden eagles) have been known to perch in the area and prey on fawns, but this event is rare. Given the rarity of this event, no mitigation measures are necessary to reduce raptor perching is this area (personal communication with M. Perkins, BLM Ely Field Office, July 24, 2000).

Crescent Valley (b) Route Alternative



The Crescent Valley (b) route alternative is comprised of Segments A, B, F, H, I, and J. It follows a nearly identical alignment with the Crescent Valley (a) route, except that it uses Segment H rather than Segment G, traversing the east side of Whistler Mountain rather than the west. The Crescent Valley (b) route shares the impacts common to all route alternatives (i.e., Impact Wildlife-1 through -9) and the impacts associated with Crescent Valley (a) route, except it would avoid impacts along Segment G. No new impacts were identified for Segment H.

Pine Valley (a) Route Alternative



The Pine Valley (a) route alternative is comprised of Segments A, C, D, F, G, I, and J. It follows a similar alignment to the Crescent Valley (a) route, except that it uses Segments C and D instead of Segment B. In addition to the impacts common to all route alternatives described previously (i.e., Impact Wildlife-1 through -9), the Pine Valley (a) route would involve potential bird collision impacts at Whirlwind Valley along Segment C and at Slough Creek along Segment G These two areas would also require mitigation associated with perching raptors. This route would also be in the vicinity of crucial mule deer winter range in the Newark Valley along Segment I and Segment C as described below. No new impacts were identified for Segment D.

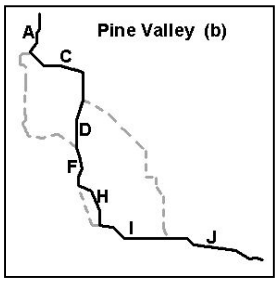
Segment C

Segment C crosses through Whirlwind Valley where inland saltgrass provides nesting habitat for long billed curlews and other shore birds. The potential for collision with the transmission line is greater in this area as well as the potential for increased predation. Bird flight diverters and perch deterrents (see Mitigation Measure Wildlife-5 and Mitigation Measure Wildlife-7) would be utilized at this location to minimize potential collisions and increased predation. The COM Plan would identify how many spans of the transmission lines would need flight diverters and perch deterrents at both locations.

Segment C would be located in the vicinity of a mule deer winter range designated as crucial by NDOW: Dry Hills – Cortez Range under Elko's jurisdiction (personal communication with K. Wilkinson, BLM Elko Field Office, July 19, 2000). No fawning areas have been identified near Segment C. Construction activities near crucial winter range would be considered a potentially significant impact. To reduce this impact to a less-than-significant level, SPPC would implement Mitigation Measure Wildlife-2 (i.e., scheduling construction activities to avoid seasonal migration periods for mule deer and pronghorn during the winter and early spring use period of November 1 through April 15). An additional mitigation measure specific to Segment C is listed below.

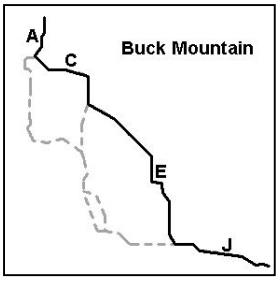
In addition to implementing Mitigation Measure Wildlife-2, SPPC would implement Mitigation Measure-4 for indirect impacts associated with the project where Segment C crosses crucial winter range (personal communication with K. Wilkinson, BLM Elko Field Office, July 19, 2000, and January 23, 2001). During construction activities, the centerline travel route and new spur roads would be restricted or signage would be posted to discourage unauthorized vehicle access. After construction, new spur roads and portions of the centerline travel route would be revegetated and reclaimed to preclude unauthorized overland vehicle access and discourage use of the right-of-way as new livestock driveway.

Pine Valley (b) Route Alternative



The Pine Valley (b) route alternative is comprised of Segments A, C, D, F, H, I, and J. It follows a nearly identical alignment with the Pine Valley (a) route, except that Pine Valley (b) uses Segment H rather than Segment G, traversing the eastern side of Whistler Mountain rather than the west. The Pine Valley (b) route alternative would have largely the same impacts as Pine Valley (a) route, except it would avoid the potential bird collision and predation impacts near the Slough Creek along Segment G.

Buck Mountain Route Alternative



The Buck Mountain route alternative is comprised of Segments A, C, E, and J. It shares the impacts common to all route alternatives (Wildlife Impact-1 through-9), including the disturbance of crucial mule deer winter range habitat in the Dry Hills – Cortez Range along Segment C. Buck Mountain is the only route that uses Segment E, which would also pass through crucial mule deer and pronghorn winter range, as described below.

Segment E

The proposed transmission line would be located in the vicinity of a mule deer winter range designated as crucial by NDOW. The route would pass through pronghorn habitat in Newark Valley near Buck Mountain (personal communication with M. Podborny, NDOW, July 24, 2000). Near the south end of Buck Mountain, the route would pass over Barrel Spring, which is located on private land and is the primary water source for pronghorns in this portion of the valley. Construction activities near crucial winter range would be considered a potentially significant impact unless Mitigation Measure Wildlife-2 is implemented in the southern end of Buck Mountain, during the winter use period of November 1 through April 15. Although no fawning areas have been identified in this area, fawning could occur.

Summary Comparison of Route Alternatives

TABLE 3.6-5: SUMMARY OF IMPACTS BY ROUTE ALTERNATIVE

Impact	Crescent Valley (a)	Crescent Valley (b)	Pine Valley (a)	Pine Valley (b)	BUCK MOUNTAIN
Impact Wildlife-1: Wildlife Habitat Disturbance and Removal	X	X	X	X	X
Impact Wildlife-2: Disturbance of Mule Deer and Pronghorn in Seasonal Habitat	X	X	X	X	X
Impact Wildlife-3: Loss and Displacement of Wildlife	X	X	X	X	X
Impact Wildlife-4: Indirect Impacts on Wildlife from Increased Human Presence and Access	X	X	X	X	X
Impact Wildlife-5: Potential Bird Electrocutions and Collisions	X	X	X	X	X
Impact Wildlife-6: Impacts to Migratory and Resident Birds	X	X	X	X	X
Impact Wildlife-7: Increased Predation from Wildlife	X	X	X	X	X
Impact Wildlife-8: Impacts to Wildlife from Water Resources	X	X	X	X	X
Impact Wildlife-9: Impacts to Riparian Habitat	X	X	X	X	X
Impact Wildlife-10: Impact to Nesting Raptors (K re-route along Segment B)	X	X			

RESIDUAL IMPACTS

After mitigation, minor residual effects to wildlife and their habitat would result from temporary habitat loss and displacement of wildlife. The potential to create fragmented habitat does exist; however, fragmentation may only be a temporary impact until revegetation has occurred (see Reclamation Plan in Appendix E). Habitat fragmentation generally is associated with the conversion of large tracts of land with quality or rare habitats that have become isolated. The "edge" habitats, those habitats that have perturbations which result in an altered land/intact habitat ecotone, generally increase rates of predation (i.e., easier access by predators), brood parasitism, and competition (i.e., introduction of other species such as weeds) along the edge habitat.

Nevada is unique with the landforms that define the Basin and Range in which high elevation mountains and lower valley floors harbor isolated "island" populations of various species. This physiographic configuration is indeed natural habitat fragmentation. However, the term habitat fragmentation is often utilized in terms of human intrusions where unnatural edges are created. The Great Basin is unique as a whole; however, in terms of uniqueness of habitat, the majority of the habitat in the project area is not rare within the Great Basin.

In terms of competition such as the introduction of weed species, Section 3.4, Vegetation, and Section 3.5, Invasive Nonnative Species, and the Reclamation Plan in Appendix E address this issue and, therefore, the project should not have significant residual impacts. The project would not likely reduce biodiversity, isolate habitats, or have an effect on the long-term viability of common wildlife should the recommended mitigation measures be implemented. With respect to the project and the existing landscape, it is likely that only the potential for increased predation would be a residual impact. After reclamation, these impacts should be minimal.

NO ACTION ALTERNATIVE

Under the No Action Alternative, impacts to existing wildlife and wildlife habitat associated with this project would not occur. However, wildlife impacts could occur in other areas as SPPC and the Nevada PUC would begin emergency planning efforts to pursue other transmission and/or generation projects to meet the projected energy load capacity shortfall.